

- 3 -

AMENDMENTS TO THE CLAIMS:

1. (currently amended) In a plasticized thermoplastic elastomeric product selected from the group consisting of (a) a ~~vinylaromatic polyolefin~~ vinylaromatic compound and a conjugated diene polyblock copolymer, optionally hydrogenated to include a block of a mono(lower)olefin, the olefin having from 2 to 4 carbon atoms, and, (b) a thermoplastic vulcanizate,
the improvement wherein (a) and (b) each have uniformly distributed therewithin, a liquid polyisobutene oil plasticizer having a number average molecular weight ("Mn") in the range from 200 to 6000, fluidizable under melt-blending conditions of (a) and (b), the polyisobutene selected from the group consisting of (i) a homopolymer of polyisobutylene and (ii) a copolymer of isobutene and butene, butene repeating units being present in a minor molar proportion;
the amount of polyisobutene oil being sufficient to provide the elastomeric product with a hardness in the range from Shore A 40 to 80 and an oxygen-permeability less than 20,000 cc. (2.54 μ m)/m².day.atm at 23°C; and,
(a) having Mn in the range from about 40,000 to 1,100,000 and (b) having a Shore A hardness in the range from 30 to 100, tensile strength at 100% elongation in the range from about 0.5 to 10 MPa and specific gravity in the range from 0.9 to 0.99.
2. (original) The product of claim 1 having a hardness in the range from Shore A 40 to 80 and a thickness in the range from 0.1 mm to 10 mm, and (a) is at least partially hydrogenated.
3. (currently amended) The product of claim 1 wherein the elastomer is (a) and has homogeneously distributed therewithin, from 5 to 150 phr, based on 100 parts by weight of (a), of the a poly(lower)monoolefin.
4. (previously presented) The product of claim 3 wherein the elastomer is (a) and the has distinct Tgs for each of three phases, attributable to (a) a vinylaromatic hydrocarbon

- 4 -

phase, (b) a conjugated diene, optionally hydrogenated, phase, and (c) a polyolefin phase.

5. (currently amended) The product of claim [[1]] 3 wherein the poly(lower)mono-olefin has a melt index in the range from 0.2 to 200 gm/10 min at 230°C and 2.16 Kg load, and is combined with from zero to an equivalent amount by weight of a mono(lower)-olefinic rubber having Mn greater than 200,000.
6. (original) The product of claim 1 wherein the elastomers (a) and (b) have homogeneously distributed therewithin, from 20 to 180 phr of polybutene, based on 100 parts by weight of (a) or (b), including in addition from 1 to 5 phr, based on 100 parts by weight of (a) or (b), of an additive selected from the group consisting of a non-reinforcing non-reactive filler, stabilizer, processing aid, antiblocking aid, antistatic agent, wax, foaming agent, pigment, and flame retardant.
7. (original) The product of claim 1 wherein (a) is a block copolymer having vinylaromatic end-blocks and a mid-block selected from the group consisting of polyisoprene, polybutadiene, and hydrogenated copolymers thereof, having blended therein from 30 to 100 phr of polybutene, based on 100 parts by weight of (a), and a compatible amount, from 1 to about 20 phr of a detackifier per 100 parts by weight of (a).
8. (previously presented) The product of claim 7 wherein (a) is a triblock copolymer, the vinylaromatic end-blocks are polystyrene, and the mid-block is selected from the group consisting of poly(isoprene) and poly(butadiene), and hydrogenated forms thereof in heterogeneous relative order, including styrene-ethylene-butylene-styrene.
9. (previously presented) The product of claim 8 wherein the vinylaromatic end-blocks are polystyrene and the mid-block is selected from the group consisting of polyisoprene and polybutadiene; and the detackifier is selected from the group consisting of a silicone oil and an epoxidized vegetable oil.
10. (original) The product of claim 6 wherein the polybutene is present in an amount

- 5 -

from about 30 to 100 phr respectively, per 100 parts of (a) or (b).

11. (previously presented) The product of claim 8 having a oxygen-permeability in the range from about 2,000 to 20,000 cc. (2.54 μ m)/m².day.atm at 23°C.

12. (canceled)

13. (previously presented) The product of claim 8 wherein (a) has a number average molecular weight in the range from about 70,000 to about 500,000.

14. (previously presented) The product of claim 8 wherein (b) has a number average molecular weight in the range from about 70,000 to about 500,000.

15. (previously presented) The product of claim 1 wherein (b) is a blend of polypropylene and ethylene-propylene diene monomer rubber having blended therein from 20 to 180 phr of polyisobutene, based on 100 parts by weight of (b), and a compatible amount, from 1 to about 20 phr of a detackifier per 100 parts by weight of (b).

16. (currently amended) A closure means comprising an elastomeric sealing element having a thickness in the range from about 0.1 mm to about 10 mm, held in removably sealing relationship with the closure means, for sealing a container against permeation of an oxygen-containing gas, wherein the sealing element is an elastomer selected from the group consisting of (a) a ~~vinylaromatic-polyolefin~~ vinylaromatic compound and a conjugated diene polyblock copolymer, optionally hydrogenated to provide a block of a mono(lower)olefin, the olefin having from 2 to 4 carbon atoms, and, (b) a thermoplastic vulcanizate, wherein (a) and (b) each have uniformly distributed therewithin, a liquid polyisobutene oil plasticizer having a number average molecular weight ("Mn") in the range from 200 to 6000, fluidizable under melt-blending conditions of (a) and (b), present in an amount in the range from about 30 to 150 phr, per 100 parts of (a) or (b), the polyisobutene selected from the group consisting of (i) a homopolymer of polyisobutylene and (ii) a copolymer of isobutene and butene, butene repeating units being present in a minor molar

- 6 -

proportion;

the amount of polyisobutene oil being sufficient to provide the elastomeric product with a hardness in the range from Shore A 40 to 80 and an oxygen-permeability less than 20,000 cc. (2.54 μ /m².day.atm at 23°C;

(a) having Mn in the range from about 40,000 to 1,100,000; and,

(b) having a Shore A hardness in the range from 30 to 100, tensile strength at 100% elongation in the range from about 0.5 to 10 MPa and specific gravity in the range from 0.9 to 0.99.

17. (previously presented) The closure means of claim 16 wherein (a) is a triblock copolymer having vinylaromatic end-blocks and a mid-block selected from the group consisting of polyisoprene, polybutadiene, poly(lower)olefin, and a hydrogenated copolymer thereof; and the sealing element has a hardness in the range from about Shore A 40 to 80, and includes from about 1 to 20 phr of a detackifier.

18. (original) The closure means of claim 16 wherein the sealing element is light-permeable.

19. (previously presented) The closure means of claim 16 wherein the sealing element is provided by (a) having homogeneously distributed therewithin, from 5 to 150 phr, based on 100 parts by weight of (a), of a poly(lower)monoolefin.

20. (original) The closure means of claim 16 wherein the closure means is a bottle cap and the container is a bottle.

21. (original) The closure means of claim 16 wherein the closure means is a stopper and the container is a bottle.

22. (currently amended) A method for providing an essentially oxygen-impermeable elastomeric sealing element comprising blending an elastomer selected from the group consisting of (a) a ~~vinylaromatic-polyolefin~~ vinylaromatic compound and a conjugated diene polyblock copolymer, optionally hydrogenated to provide a block of a mono(lower)olefin,

- 7 -

the olefin having from 2 to 4 carbon atoms, and, (b) a thermoplastic vulcanizate, wherein (a) and (b) each have uniformly distributed therewithin, polyisobutene fluidizable under melt-blending conditions of (a) and (b), present in an amount in the range from about 20 to 180 phr, per 100 parts by weight of (a) or (b), the polyisobutene selected from the group consisting of (i) a homopolymer of polyisobutylene and (ii) a copolymer of isobutene and butene, butene repeating units being present in a minor molar proportion; and, thermoforming a seal having a hardness in the range from about Shore A 40 to 80 and an oxygen permeability less than 20,000 cc. (2.54 μ m)/m².day.atm at 23°C.

23. (currently amended) A resin composition which comprises from 100 parts by weight of an elastomer selected from the group consisting of (a) a ~~vinylaromatic-polyolefin~~ vinylaromatic compound and a conjugated diene polyblock copolymer, optionally hydrogenated to provide a block of a mono(lower)olefin, the olefin having from 2 to 4 carbon atoms, and, (b) a thermoplastic vulcanizate, wherein (a) and (b) each have uniformly distributed therewithin, a liquid polyisobutene oil plasticizer having a number average molecular weight ("Mn") in the range from 200 to 6000, fluidizable under melt-blending conditions of (a) and (b), present in an amount in the range from about 20 to 180 phr per 100 parts by weight of (a) or (b), the polyisobutene selected from the group consisting of (i) a homopolymer of polyisobutylene and (ii) a copolymer of isobutene and butene, butene repeating units being present in a minor molar proportion; (a) and (b) each having Mn in the range from about 40,000 to 1,100,000; and, the resin having a hardness in the range from about Shore A 40 to 80 and an oxygen-permeability less than 20,000 cc. (2.54 μ m)/m².day.atm at 23°C.

24. (currently amended) The resin of claim 22 wherein (a) is a triblock copolymer having vinylaromatic end-blocks and a mid-block selected from the group consisting of polyisoprene, polybutadiene, and hydrogenated copolymers thereof, and has homogeneously distributed therewithin, from 5 to 150 phr, based on 100 parts by weight of (a), of the a poly(lower)monoolefin.